

(21) Application No. 16893/71 (22) Filed 25 May 1971

(23) Complete Specification filed 4 Oct. 1971

(44) Complete Specification published 12 June 1974

(51) International Classification A41B 9/04

(52) Index at acceptance

A3V 1B3A1 5P 7A2

A5R 83A

(19)



## (54) DISPOSABLE SANITARY KNICKERS

(71) We, JOHN ALAN JOWITT and DAWN ELIZABETH KATHLEEN DOROTHEA JOWITT, of Brook House, Chideock, Bridport, Dorset, both British subjects, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to disposable sanitary knickers and has for its object the provision of disposable sanitary knickers which serve the purpose for which they are intended in a highly satisfactory and efficient manner; are strong and very easy and inexpensive to produce; can be made to occupy a small compact state so that they can be carried about in a handbag so as to be immediately available when required; and which need not be stepped into or out of when put on or removed thus making it possible for them to be worn in conjunction with tights without the need for complete removal of the latter over the wearer's feet.

15 According to the present invention there is provided disposable sanitary knickers comprising an outer covering or skin made of a liquid-proof flexible sheet plastics material and consisting of front and back portions and an integral crotch portion, the latter portion having applied to the inner surface thereof an additional crotch portion of liquid-absorbent tissue paper and the waist parts of the said front and back portions being adapted to be detachably connected together at each side of the knickers.

20 To enable the invention to be clearly understood a preferred embodiment will now be described by way of example with reference to the accompanying purely diagrammatic drawings, wherein:—

25 Figure 1 is a plan view of the knickers opened and laid out flat, and

30 Figure 2 is a perspective view showing the knickers as worn.

Referring to said drawings the knickers are made from a single ply of flexible sheet plastics material 1 of appropriate thickness

or alternatively from two or more super-imposed thin layers of flexible sheet plastics material thus providing a single or multi-ply sheet plastics material constituting an outer covering or skin. To the inner face of the crotch portion of this outer covering is applied a plurality of layers or plies of absorbent tissue paper 2 and these plies of absorbent tissue paper 2 are stitched at 3 to the side edges of the crotch portion 4 of the outer skin 1 of the sheet plastics material, i.e. those edges extending from front to back of the knickers as viewed in a position of wear.

The said single or multi-ply skin of liquid-proof plastics material 1 extends above the upper edges of the multi-ply absorbent tissue paper 2 to form front and back waist portions 5 which may, if desired, be punched or otherwise formed with an multiplicity of ventilation holes 6.

The said stitching 3 previously referred to for sewing the side edges of the multi-ply liquid absorbent tissue paper 2 to the side edges of the single or multi-ply sheet plastics material 1 is preferably shirring elastic which is stitched in zig-zag fashion and also extends at 3a along both the front and back waist forming portions 5 of the sheet plastics material 1 adjacent the edges thereof so as to constitute elasticised waist portions. In this manner the waist portions 5 are elasticated whether made of single or multi-ply sheet plastics material. The knickers are thus adapted to be opened at the waist at each side and the meeting adjacent ends of the front and rear parts of the waist band are detachably connected together by light snap-fitting complementary stud and socket fasteners 7 which are affixed to tapes 8 sewn to the ends of the waist band forming portions.

Alternatively, said stud fasteners 7 may be punched into the sheet plastics material at the ends of said waist band forming portions 5.

Although the outer covering or skin of the knickers may be made of two or more layers of sheet plastics material they are

preferably made of a single layer of sheet plastics material of appropriate thickness so as to provide the necessary strength and to be sufficiently liquid proof. The use of a single thickness of sheet plastics material will render more easy the sewing process involving the sewing of shirring elastic 3a in a zig-zag fashion to form elasticated front and rear waist portion 5 and also where this stitching is extended at 3 along the side edges of the crotch portion 4 of the sheet plastics material so as to sew the side edges of said layers of multi-ply absorbent tissue paper 2 forming the inner crotch portion to the sheet plastics material 1 of said knickers. Only the side edges of the absorbent tissue paper are attached to the side edges of the crotch portion of the sheet plastics material and the contacting surfaces of these materials remain unattached.

Any suitable form of liquid-proof sheet plastics material 1 of a liquid proof nature may be used. One suitable sheet plastics material is that known as plastic "tissue-thene" (registered trade mark) which is manufactured by the Shell Oil Company. It is to be clearly understood, however, that the exact type of sheet plastics material used may be varied as desired. The flexible sheet plastics material used resembles, as regards thickness and flexibility, ordinary tissue paper.

When the knickers are made of a number of layers of sheet plastics material 1 these layers may be separate layers that are superimposed one over the other or these layers may be constituted by folding one or more thicknesses of sheet plastics material so as to build up the required number of layers.

#### WHAT WE CLAIM IS:—

1. Disposable sanitary knickerwrs comprising an outer covering or skin made of a liquid-proof flexible sheet plastics material and consisting of front and back portions and an integral crotch portion, the latter portion having applied to the inner surface thereof an additional crotch portion of liquid-absorbent tissue paper and the

waist parts of the said front and back portions being adapted to be detachably connected together at each side of the knickers.

2. Knickers as claimed in Claim 1, wherein said outer covering or skin is a single ply of liquid-proof sheet plastics material.

3. Knickers as claimed in Claim 1, wherein said outer covering or skin is a multi-ply liquid-proof sheet plastics material.

4. Knickers as claimed in any of the preceding claims, wherein the side edges of the tissue paper are sewn to the side edges of the crotch portion of the outer covering or skin by shirring elastic stitches in zig-zag fashion.

5. Knickers as claimed in Claim 4, wherein the edges of the waist forming parts of said outer covering are also sewn with shirring elastic in zig-zag fashion.

6. Knickers as claimed in any of the preceding Claims wherein said waist parts of the outer covering are formed with ventilation openings.

7. Knickers as claimed in any of the preceding Claims wherein said waist parts are adapted to be detachably connected together at each side of the knickers by snap-fitting complementary stud and socket fasteners affixed to tapes sewn to the ends of the waist parts.

8. Knickers as claimed in any of the Claims 1 to 6, wherein said waist parts are adapted to be detachably connected together at each side of the knickers by snap-fitting complementary stud and socket fasteners, punched into the plastics material.

9. Disposable sanitary knickers constructed substantially as hereinbefore described with reference to and as illustrated by the accompanying drawings.

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# COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale*

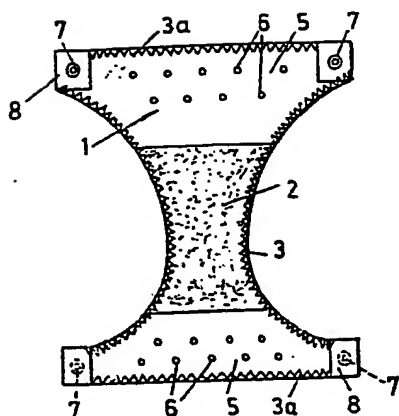


FIG. 1.

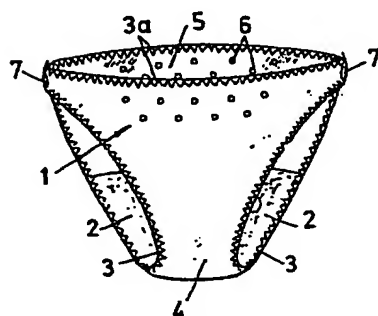


FIG. 2 .